



THE ACADEMY OF APPLIED  
TECHNICAL STUDIES  
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**POLITEHNIKA 2023**

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Belgrade, 15<sup>th</sup> December 2023

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**ENVIRONMENT AND  
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## FOREWORD

The International Scientific and Professional Conference POLITEHNIKA 2023 represents the seventh edition of the POLITEHNIKA scientific and professional events, occurring biannually since its inaugural event in 2011. POLITEHNIKA 2023 upholds a distinguished tradition and commitment to integrating higher education and practical application across a diverse spectrum of disciplines represented by defined thematic scopes.

Organized with the patronage of the Ministry of Education of the Republic of Serbia, the Ministry of Environmental Protection of the Republic of Serbia, the Ministry of European Integration of the Republic of Serbia, the Directorate for Occupational Safety and Health, the Office for Dual Education and National Qualifications Framework, the Conference of Academies of Applied Studies in Serbia, the Chamber of Commerce of Serbia, the Chamber of Commerce of Belgrade, the Institute for Standardization of Serbia, the Association of Belgrade Architects, the City of Požarevac and the Tourist Organization of the City of Požarevac, POLITEHNIKA 2023 stands as a collaborative platform at the intersection of academia, governmental institutions and industry.

This year heralds a notable progression with its international status and the incorporation of 10 conference scopes. Expanding beyond the thematic domains featured in previous events, the Conference now encompasses Environment and Sustainable Development, Occupational Safety and Health and Fire Safety, Smart Management Systems, Graphic Engineering, Design, Traffic Engineering, Biotechnology and Healthcare, Mechanical Engineering, Ecotourism and Rural development, and Mechatronics. By engaging experts, emerging professionals, and practitioners from these domains, the conference unifies fields of study programs of the Academy of Applied Technical Studies Belgrade. The thematic scopes, coupled with the structure of the compiled papers in this Proceedings, exhibit a rich diversity and multidisciplinary approach, fundamentally contributing to a holistic examination and resolution of societal and scientific challenges.

Comprising over 220 peer-reviewed contributions, the Proceedings represent a substantial intellectual asset, aligning with the conference's overarching objective of fostering the exchange of knowledge, research findings, and professional experiences among experts from industry, research institutions, and higher education establishments.

The Proceedings of the International Scientific and Professional Conference POLITEHNIKA 2023 serve as a comprehensive snapshot of the current landscape within the thematic realms of the conference, offering both insights and directives for ongoing scientific and professional development. Moreover, they proffer concrete solutions to practical challenges grounded in contemporary trends and pertinent insights.

The Academy of Applied Technical Studies Belgrade extends its sincere appreciation to all conference supporters whose financial contributions played a pivotal role in its successful realization. Special acknowledgment is reserved for the authors of the papers, whose diligence and eagerness to present their work to a wider audience, alongside the reviewers and members of the International Scientific Committee, Program Committee and Organizational Committee, have collectively contributed to the triumph of the International Scientific and Professional Conference POLITEHNIKA 2023.

Belgrade, December 2023  
EDITORS



## ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

### INVITED PAPERS

**Srećko Stopić, PhD, Bernd Friedrich, PhD, Process Metallurgy and Metal Recycling, RWTH Aachen University, Germany**

*Advances in understanding of a role of unit metallurgical operations for recycling*

**Svetlana Grujić, PhD, Faculty of Technology and Metallurgy, University of Belgrade**

*Emerging pollutants in the environment: contamination of the Danube river basin in Serbia*

**Marija Nikolić, PhD, Faculty of Technology and Metallurgy, University of Belgrade**

*Biodegradable polyesters – from ecology to medicine*

## DESIGN

### INVITED PAPER

**Jelena Ristić Trajković, PhD, Faculty of Architecture, University of Belgrade**

*Society, Ecology and Design Education: Transformative Learning for Future Sustainable and Healthy Environments*

## MECHANICAL ENGINEERING

### INVITED PAPERS

**Tamara Bajc, PhD, Faculty of Mechanical Engineering, University of Belgrade**

*Energy savings and CO<sub>2</sub> emission reduction potential through the existing building renovation*

**Marko S. Jarić, PhD, Innovation Centre of Faculty of Mechanical Engineering in Belgrade**

*Analysis of remediation of horizontal cylindrical tank for oil storage*

## ECOTURISAM AND RURAL DEVELOPMENT

### INVITED LECTURES

**Marko Perić, PhD, Faculty of Tourism and Hospitality Management, University of Rijeka, Croatia**

*Challenges of sustainable tourism: Example of Croatia*

**Snežana Štetić, PhD, Balkan Network of Tourism Experts, Igor Trišić, PhD, Faculty of Geography, University of Belgrade**

*Selective forms of tourism and sustainable development of rural tourist destinations*

### INVITED PAPERS

**Radomir Stojanović, PhD, Western Serbia Academy of Applied Studies**

*Education as a pillar of sustainable agritourism in Serbia*

**Jelena Premović, PhD, Faculty of Economics, University of Priština & Faculty of Economics and Engineering, University Business Academy in Novi Sad**

*Cultural heritage as a generator of sustainable development of tourism in local communities in the countries of the Western Balkans*

**Vladimir Živanović, Nevena Majstorović, Zlatibor Tourism Organization, Zlatibor**

*Analysis of the real number of tourist overnights based on the estimation of water consumption in Zlatibor*

## MECHATRONICS

### INVITED PAPER

**Andrea Matta, PhD, Dept. of Mechanical Engineering, Politecnico di Milano, Italy Mohsen Jafari, PhD, Dept. of Industrial and Systems Engineering, Rutgers University, USA**

*Towards a theory of digital twins: fundamental definition*

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## **SOCIETY, ECOLOGY AND DESIGN EDUCATION: TRANSFORMATIVE LEARNING FOR FUTURE SUSTAINABLE AND HEALTHY ENVIRONMENTS**

*Jelena Ristić Trajković<sup>1</sup>, Faculty of Architecture, University of Belgrade*

**Abstract:** *To effectively tackle the complex socio-ecological challenges of our time, it is imperative to utilise design approaches that are both transformative and broadly applicable. Such design approaches must transcend traditional boundaries of fields, domains, and disciplines and foster cross-cutting collaboration and innovation. By adopting a holistic and inclusive perspective, we can work towards meaningful and sensitive solutions that address the multifaceted challenges facing our society and environment. Failure to do so could result in a lack of understanding of environmental values and problems, leading to a significant lack of progress and understanding in these critical areas of our lives. In line with that, design education can play a central role in creating more sustainable, equitable and healthy urban environments. Transformative learning can provide “a qualitative shift“ in our living spaces at all spatial scales. It calls for dialogue, reflection, and action, whereas it addresses multiple ecological, societal, and health crises. This presentation aims to share lessons learned from international cooperations and projects, offering examples to enrich design education and practice development.*

**Keywords:** socio-ecological challenges, transdisciplinarity, holistic design, environment-behavior relations, living spaces

### **1. THE IMPERATIVE FOR CHANGE**

As we progress through the 21st century, the relationship between human societies and natural environments becomes increasingly endangered. With the rapid advancement of science, technology, urbanization, and climate challenges, humanity's aspirations with regard to ecological imperatives are being fostered toward domination and disconnection. Addressing this re-examination demands an interdisciplinary approach recognising that our collective actions simultaneously affect both social structures and ecological systems [1]. Understanding the interconnections between these complex challenges is crucial to creating a regenerative, equitable, and harmonious future for all. The current epoch is recognised as the epoch of the Anthropocene, in which humans and our societies have become a global geophysical force [2]. Human influence has become the primary driver of change, surpassing natural processes [3]. Science and technology have transformed the human experience on Earth by compressing time and space, offering novel opportunities and perspectives of action, resulting in multiscale and rapid global transformation [4]. Biodiversity and cultural loss, resource depletion, social disparities, and degradation of health and well-being are just some of the crucial topics in this context. As Kolbert observes over the last half a billion years, there have been five mass extinctions, when the diversity of life on earth suddenly and dramatically contracted. The sixth extinction is likely to be mankind's most lasting legacy, and it compels us to rethink the fundamental question of what it means to be human [4]. As the global population grows and urban areas become more crowded, there is increasing pressure on resources, leading to complex issues that require new solutions. Addressing these challenges demands a collaborative effort, combining knowledge and expertise from various disciplines such as ecology, sociology, economics, and many others.

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In this context, design can serve as a bridging discipline, providing a framework to conceptualise and implement solutions considering both human and environmental well-being. The complexity of prevailing socio-ecological crises highlights the limitations of conventional design methods, emphasising the imperative for a shift in design practices [5]. The present situation underscores the imperative for design practices to shift towards more socially and ecologically responsible approaches [6]. To address the intricate socio-ecological issues of our time, we must employ design methodologies that should be adaptable across different contexts, promoting a holistic approach to regeneration and societal well-being. It implies creating a profound change in perspective, encouraging designers to integrate knowledge across various disciplines and topics, and critically assess their own beliefs and experiences. By embracing a holistic and transformative perspective, design education can pave the path for training professionals who are not only capable of creating visually appealing and functional spaces and objects but also profoundly considerate of the broader environmental, societal, and ethical implications of their projects. Such a systematic framework is often referred to as transformative learning. Emphasising systemic change and holistic understanding, transformative design is more than just an option. It's a critical necessity.

## **2. DESIGN EDUCATION AS A CATALYST FOR REGENERATIVE URBAN ENVIRONMENTS**

### **2.1 Breaking Barriers: Transcending Traditional Disciplinary Boundaries**

The traditional boundaries of individual subjects should not confine education. Schools and universities should encourage an interdisciplinary approach to help students understand the interconnectedness of human societies, natural environments, and built environments [7]. While providing in-depth knowledge and expertise in a particular field, discipline-specific approaches have limitations, especially when addressing complex, multi-faceted challenges. This narrow perspective can obstruct understanding and detecting expansive, interconnected systems and settings crucial for thorough problem resolution. Consequently, it might induce shortcomings like a limited scope of understanding, difficulty adapting to swift changes, susceptibility to repetitiveness, a restricted skill range, inherent biases, and disjointed communication. Merging varied expertise, viewpoints, and approaches through interdisciplinary collaboration often paves the way for groundbreaking solutions. In our rapidly changing world, an overly specialised focus can inhibit adaptability to fresh insights or novel technologies from different domains. A deep commitment to one discipline can introduce biases, causing professionals to overly favour their specific methods and perspectives, which might distort results and lead to miscommunication and lost opportunities. Depending solely on specialised training may not provide professionals with the broad skill set essential for diverse teams or ventures. In line with this, we must encourage ongoing dialogue, reflection, and action among all sectors and disciplines involved in environmental design and policy. Transformative learning has already marked notable successes, serving as a standpoint of optimism for educators and learners. Current achievements in this area not only validate the effectiveness of such an approach but also illuminate a promising path forward, especially in terms of its potential to reshape educational paradigms.

### **2.2 Transformative Learning: A Paradigm Shift**

Transformative learning is a deep form of learning where individuals change their frames of reference, including belief systems and behaviour. Learning as transformation goes to the heart of human experience: our quest for meaning, our pursuit of growth, and our role as agents of change in an ever-evolving world. The interplay between individual development and societal change and how we change ourselves to adapt to or challenge the circumstances that surround us, is crucial, as it shapes not only our personal growth but also the evolution of our communities and societies [8]. In practice, transformative learning can happen in various settings – in formal education, professional development, or personal life experiences. It is crucial that it involves not just the individual learner but also the social and relational contexts in which they are embedded [9]. This concept has

exceptional potential for design education for a variety of reasons. It provides understanding and grappling with the complexity of contemporary multifaceted design challenges, cultivating critical and adaptive thinking, promoting empathy and ethical consideration, going beyond disciplinary boundaries, fostering lifelong learning, enhancing collaborative skills, and constantly questioning established norms.

Today's design problems, from urban planning to product innovation, are more complex than ever. The speed and nature of change in the contemporary world mean that designers must constantly adapt [10]. Transformative learning gives designers the skills to assess and understand their pre-existing beliefs and experiences critically, allowing them to address these multifaceted challenges holistically. Transformative learning fosters an adaptive and reflective mindset, enabling designers to evolve alongside the rapidly shifting landscapes of technology, society, and the environment. It highlights the importance of empathy and ethical reflection, ensuring designers consider their work's broader implications and responsibilities [11]. Design directly impacts users, communities, and environments. Traditional educational models can sometimes perpetuate linear, compartmentalised thinking. On the other hand, transformative learning challenges learners to break out of these barriers, promoting interdisciplinary thinking vital for innovative design solutions [12]. It continuously provokes a lifelong commitment to ensuring designers remain current, relevant, and effective. Design projects often involve teamwork and collaboration with professionals from diverse fields. Transformative learning equips individuals with the skills to understand and value diverse perspectives, fostering more effective and harmonious collaborative efforts. At its core, design is about envisioning and creating the future. Transformative learning encourages challenging the status quo and reimagining possibilities, which is fundamental for forward-thinking design.

Traditional design education often focuses on aesthetic and functional aspects, sometimes overlooking the broader environmental implications of design choices. Integrating social and ecological considerations from the outset helps designers to become advocates for environmental stewardship, ensuring that they consider the entire lifecycle impacts of their designs on ecosystems, societies and resources. Designers play a crucial role in shaping communities. By emphasising social aspects and human-centred design, future designers will learn to create spaces that support community, equality, and inclusivity. By fostering a deep, critical understanding of existing norms, this educational approach equips urban planners, architects, and designers with the tools to envision and create spaces and objects that are more sustainable, regenerative, equitable, and health-focused. Designing regenerative environments often demands challenging existing paradigms and rethinking established practices that might be detrimental to the environment and well-being, both in terms of personal well-being and the broader well-being of communities and the environment.

This educational approach emphasises the intricate connections between environmental sustainability, social systems, economic models, and cultural shades in urban design processes. Questioning existing power structures and societal norms leads to a design that prioritises social justice and equity, ensuring that urban spaces are accessible, inclusive, and beneficial to all, regardless of socioeconomic status. A heightened focus on health, encompassing both psychological and physical aspects, is also essential.

The concept of "transformative" in design and education denotes a profound shift in how we perceive, understand, and address challenges. It nurtures a culture of reflection. This reflective practice is crucial for continuous personal and professional development, fostering a mindset of lifelong learning and adaptation to new challenges and information. Rather than simply tinkering at the margins or making incremental improvements, transformative approaches seek profound, foundational changes in how we think and act [8].

### **3. INTERNATIONAL COOPERATION: LESSONS LEARNED**

This section opens a discussion on various experiences, challenges, and gaps in the application of transformative learning realised within the framework of international scientific projects and expert networks:

- 1) SHiFT - *Social Sciences and Humanities for Transformation and Climate Resilience* – COST Action CA21166, European Cooperation in Science and Technology (2022-2026) [13].
- 2) HERSUS - *Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education*, Erasmus + Programme of the European Union (2020-2023) [14].
- 3) sUser - *Introducing User-Driven Design and Agile Development Skills in the Case of Sustainable Service Housing for Elderly*, Erasmus + Programme of the European Union (2022-2025) [15].

### **3.1 Urban imaginary - Transdisciplinary time traveler’s guide to our shared future(s)**

This chapter shares experiences from an international summer school Urban Imaginary - Exploring our Urban Futures” which was hosted under COST action SHiFT - Social Sciences and Humanities for Transformation and Climate Resilience. The 5-day course took place in the National Museum of Science and Natural History and the Botanical Garden of Lisbon, Portugal, 3-7 July 2023.

The summer school was envisioned as a creative co-learning and transformative environment. It was conceptualised as an educational setting that intertwined both intellectual and experiential knowledge to enrich the body and mind simultaneously and synergistically. With 48 trainers and participants from varied disciplines across 20 countries, both from Europe and beyond, the program adopted a transdisciplinary and transformative methodology. This approach facilitated the exploration of various dichotomies, conflicts, and urban challenges and spurred discussions on innovative, regenerative visions for the future. Participants were immersed in a blend of theoretical lectures, interactive discussions, guided explorations, and integrated embodied and experiential learning sessions, consistently emphasising experiential and hands-on learning. The selected fusion of art and science in a transdisciplinary manner aimed to endow learners/travelers with both a tangible experience and a theoretical grasp of transdisciplinarity, demonstrating how to address real-world challenges holistically. Every morning of the course was initiated with an embodiment session in the Botanical Garden, tapping into the profound insights of embodied knowledge and the body's wisdom. As the sessions progressed, trainees grew more expressive, harmoniously aligning with fellow participants and nature, seemingly converging as a singular entity. The culmination of this learning journey was group presentations showcasing visionary urban design ideas for various Lisbon locations. These showcases amalgamated performance art, narratives, poetry, innovative design strategies, and visual illustrations, all underpinned by core values like kincentric futures, well-being, care, community bonds, utopian visions, transformative evolution, and heritage preservation. Participants' varied disciplinary and geographical origins brought a unique knowledge spectrum and experiential richness to their collaborative groups.

This summer school opened a spectrum of emotions and experiences for both trainers and trainees. The most crucial impression was the strength of creativity, embedded experience and wisdom in feeding scientific and technological innovations. Participants stated that the integrative approach creatively inspired even groups not primarily rooted in creative disciplines. They, in particular, acknowledged the transformative learning liberating potential to tackle serious matters with a light-hearted attitude, as it not only infuses hope but also makes it easier to deal with topics that might otherwise feel insurmountably difficult. It underscores the need for optimistic approaches when confronting with very daunting topics.

### **3.2 Reprogramming perspectives of architectural heritage**

The built environment is more than just physical structures. It's a cultural narrative where interpretative and discursive methods frequently transcend traditional disciplinary ways of perceiving and comprehending space and culture. In recent years, there's been a clear imperative to incorporate heritage sustainability elements into design research, practice, and education. International Project *Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education* (HERSUS) strives to contribute to this aim raising 1) a new profile of an architect/urban designer, a professional who is trained in the broad architectural domain, who

owns technical, technological, socio-humanistic and artistic skills and, therefore, equipped to contribute to the socio-environmental challenges, and (2) a new profile of architectural educator capable of assuming responsibility for the improvement of education and training of the future architects to enable them to meet the expectations of 21st-century societies worldwide for sustainable human settlements in every cultural heritage [14].

The objects and spatial wholes represent a legacy of a specific period or culture, characterised by the environmental, human, social, systemic, temporal, economic, and aesthetic values that form the basis for generating an architectural program. Contemporary design research, education and practice search for novel analytical tools and design strategies for understanding these values and addressing design issues. Architectural programming methodology assists in unravelling and steering through these complex design dilemmas. It advocates for an all-encompassing interdisciplinary method, striving to tackle the diverse aspects of our holistic environment, including the natural, built, social, cultural, and economic realms [16]. Such an approach also aims to foster a creative and cohesive link between the past, present, and future. The emphasis is placed on the design process, indicating that design isn't just the product and piece of art but a tool for challenging the current state and navigating the future.

### **3.3 Introducing System Thinking in the Case of Sustainable Service Housing for the Elderly**

Europe's increasing elderly population urgently demands rethinking specific needs for housing and services. To provide a built environment that meets the demands of the residents, it is critical to introduce user-centred design and system thinking in the design process. In the design phase, many decisions are of great importance for ecological as well as social, and economic sustainability. Future professionals must have knowledge and competence on the adequate methods and tools that can be transferred to broader co-creation and user-centred design and enhance awareness of the importance of sustainability in environmental, economic, and social contexts. From this standpoint, this project develops a future-oriented teaching material and an integrated methodological framework developed by an interdisciplinary team of researchers. The project also considers behavioural changes for individual preferences, cultural values, and awareness to support active engagement for sustainable development. This is done by stimulating innovative learning and teaching practices to increase the quality and relevance of the curricula and by promoting inter-connected higher education systems to build the partner's capacity to work transnationally and across sectors.

By breaking away from traditional silos of knowledge and embracing a more interdisciplinary and systematic educational approach, students can innovate more effectively. They learn to recognise systems at different spatial scales and complexities, understanding the interconnectedness of various elements of the system. This systemic view is a prerequisite for sustainable innovation, aiming to inspire students to find novel solutions that have multiple positive effects across the system.

## **4. CALL TO ACTION: ENRICHING DESIGN PRACTICES**

Fostering a culture of perpetual learning and adaptability within the design profession is essential for design innovation and effectiveness. O'Sullivan highlighted the importance of embodied learning, a coming into ecological consciousness [17]. Transitioning to a transformative design approach should transcend traditional classroom confines. It is crucial to encourage students to challenge existing paradigms and introspect on their academic journeys. They should be prompted to consider the ethical, environmental, and social consequences of design and technology, cultivating a sense of responsibility and ethical citizenship. Engaging in community endeavours offers students a unique opportunity to witness collaborative problem-solving and grasp the tangible societal repercussions of ecological choices. Such hands-on experiences anchor their theoretical knowledge, illustrating the real-world consequences of both policy and design decisions. Developing emotional intelligence and fostering empathy is essential to comprehend and weigh environmental and design choices' emotional and societal consequences.

However, there are numerous obstacles in the transition to transformative design education. Starting from institutional inertia, where established systems and mindsets resist change, to the challenge of integrating positive experiences systematically. Furthermore, real-world application of design solutions often encounters technical, economic, and policy constraints. The balance between visionary design and practical implementation requires a deep understanding of these challenges. In line with that, interdisciplinary and multistakeholder educational partnerships could be vital in responding to the urgency of addressing socio-ecological challenges through transformative design. They can foster awareness of the broader impacts of design decisions and innovate responsibly, ensuring the health and sustainability of environments and communities for the future. Embracing a transformative learning model transcends mere academic knowledge—it's about driving impactful change and constructive action.

*This research was supported by the Erasmus + Programme of the European Union through projects: 1) Enhancing Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education (HERSUS), 2) Introducing User-Driven Design and Agile Development Skills in the Case of Sustainable Service Housing for Elderly (sUser) and by the European Cooperation in Science and Technology through COST Action - Social Sciences and Humanities for Transformation and Climate Resilience – CA21166 (ShiFT).*

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INTERNATIONAL SCIENTIFIC  
AND PROFESSIONAL CONFERENCE  
**POLITEHNIKA 2023**

# AGENDA

Belgrade, 15<sup>th</sup> December 2023

# INTERNATIONAL SCIENTIFIC AND PROFESSIONAL CONFERENCE POLITEHNIKA 2023

15<sup>th</sup> December 2023

Belgrade, Hotel Hyatt Regency



## AGENDA

09:00 – Registration of participants

10:00 – 11:15 Official opening of the Conference

11:15 – 11:45 Coffee Break

11:45 – 14:15 Work in parallel sessions

- Scope 1. **Environment and Sustainable Development**
- Scope 2. **Occupational Health and Safety and Fire Safety**
- Scope 3. **Smart Management Systems**
- Scope 4. **Graphic Engineering**
- Scope 5. **Design**
- Scope 7. **Biotechnology and Healthcare**
- Scope 8. **Mechanical Engineering**
- Scope 9. **Mechatronics**
- Scope 10. **Ecotourism and Rural Development**

14:15 – 14:45 Cocktail / light lunch break

14:45 – 17:00 Work in parallel sessions

- Scope 1. **Environment and Sustainable Development**
- Scope 2. **Occupational Health and Safety and Fire Safety**
- Scope 4. **Graphic Engineering**
- Scope 5. **Design**
- Scope 6. **Traffic Engineering**
- Scope 7. **Biotechnology and Healthcare**
- Scope 8. **Mechanical Engineering**
- Scope 9. **Mechatronics**
- Scope 10. **Ecotourism and Rural Development**

17:00 – 17:15 Coffee Break

17:15 – 18:30 Work in parallel sessions

- Scope 1. **Environment and Sustainable Development**
- Scope 4. **Graphic Engineering**
- Scope 5. **Design**
- Scope 6. **Traffic Engineering**
- Scope 7. **Biotechnology and Healthcare**
- Scope 8. **Mechanical Engineering**
- Scope 9. **Mechatronics**

17:45 – 18:30 Poster Presentations

18:30 Conclusions and official closing of the Conference

19:00 Official Gala Dinner – Crystal Ballroom

## SCOPE 5. Design

*Conference room: Studio 1*

The allocated time for Invited Speaker presentation is up to 20 minutes.  
The allocated time for Speakers is up to 10 minutes.

**11:45 – 12:15** Invited Speakers Presentations – Chair: Ana Cvijanović

**Jelena Ristić Trajković, PhD**  
University of Belgrade, Faculty of Architecture, Serbia  
Society, ecology and design education: transformative learning for future sustainable and healthy environments

**12:15 – 14:15** Paper Presentations – Chair: Ana Cvijanović

**Biljana Pejić, Bojana Škorc**  
Familiarity as aesthetic category in design

**Biljana Pejić, Bojana Škorc**  
The effects of style on an aesthetic assessment of design

**Katarina Nikolić, Danica Glođović, Aljoša Ninković**  
Design, ideology and propaganda

**Dušanka Komnenić**  
Design as a form of communication, deconstructive approach to design

**Dragica Nikodinović**  
Analogous principle as an added value in graphic design in the post-industrial era

**Jelena Jocić, Maida Gruden**  
Design and education: traditional and online environment

**Željko Zdravković**  
Bioart and our creative biotechnological future

**14:45 – 17:00** Round Table

### **Biodesign**

#### **Moderator**

Biljana Jović, PhD, University of Belgrade, Faculty of Forestry

#### **Panelists**

Milivoj Miško Pavlović, PhD, University of Arts in Belgrade, Faculty of Fine Arts  
Željko Zdravković, PhD, The Academy of Applied Technical Studies Belgrade  
Biljana Jović, PhD, University of Belgrade, Faculty of Forestry



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INTERNATIONAL SCIENTIFIC  
AND PROFESSIONAL CONFERENCE

# POLITEHNIKA 2023

Belgrade, 15<sup>th</sup> December 2023

Hotel Hyatt Regency, Milentija Popovića 5, Belgrade

To: **Dr. Jelena Ristić Trajković**

Department of Architecture, University of Belgrade - Faculty of Architecture  
Belgrade, Serbia

## INVITATION LETTER

We are cordially inviting you to the International Scientific and Professional Conference - POLITEHNIKA 2023. The Conference will be organised by the Academy of Applied Technical Studies Belgrade and will take place on 15<sup>th</sup> of December 2023, at the Hyatt Regency Hotel, Belgrade, Serbia.

The aim of the scientific and professional Conference is to connect international experts and researchers from companies, research institutions, educational, scientific institutions and relevant state institutions, to exchange results and experiences arising from theory and practice. We are also inviting you to encourage other colleagues, researchers, professionals and fellow scientists to take part in the POLITEHNIKA 2023.

We believe that your contribution to this Conference is unparalleled and your scientific paper on the topic of your research and interest will be of great benefit to the participants of the Conference. Therefore, it is an honor and privilege to invite you to submit a paper and participate in this Conference as the **Invited Lecturer**.

We look forward to your contribution to the Conference.

Belgrade, 12<sup>th</sup> of April 2023

President of the Organizational Committee

Ana Popovic, PhD

Website: [skup-politehnika.atssb.edu.rs](http://skup-politehnika.atssb.edu.rs)